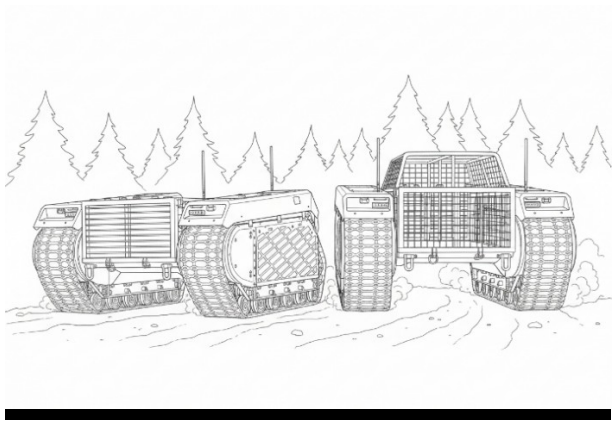
Milrem Robotics THeMIS

Tracked Hybrid Modular Infantry System — Estonia — Land Domain



IDENTITY & DESIGNATION

Official Designation: THeMIS — Tracked Hybrid Modular Infantry System

Manufacturer: Milrem Robotics — Tallinn, Estonia; majority owned by EDGE Group (UAE)

Country of Origin: Estonia — NATO member state

Unit Cost: Classified — estimated $200,000–$500,000 depending on configuration and payload

Development Status: Full production — 19+ customer nations — 200+ units ordered and delivered

Production Capacity: 500 UGVs per year — Tallinn facility — largest NATO UGV production line

> **NEW — Dutch-led initiative October 2025: 150+ THeMIS for Ukraine, assembled at VDL Defentec facility in Born, Netherlands — scalable assembly line established for future production**
>
> **NEW — DOT-Chain Defence: Milrem in active talks with Ukraine MoD to list THeMIS on Ukraine's digital frontline procurement marketplace alongside FPV drones and interceptors**

CLASSIFICATION

Domain: Land — tracked unmanned ground vehicle (UGV)

Category: Military — Modular Infantry Support UGV

Sub-Category: Medium tracked hybrid UGV — multi-mission modular platform

Primary Mission: Modular infantry support: transport, CASEVAC, combat, EOD, ISR, mine clearance

Alternate Roles: C-UAS with LOKI RCWS; loitering munition carrier; SHORAD; mortar carrier

Size Class: Medium — 1,650 kg curb weight

Terminal Mode: Recoverable — designed for repeated mission use

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PHYSICAL SPECIFICATIONS

Curb Weight: 1,650 kg

Dimensions: Approximately 2.4 m long x 2.0 m wide x 1.0 m high — low profile tracked configuration

Ground Clearance: 400 mm — cross-country capable

Payload Capacity (Standard): 750 kg

Payload Capacity (Maximum): 1,200 kg

Armour: None in base configuration — vulnerable to RPG, IED, anti-materiel rifle, FPV drone strike

Signatures — Acoustic: LOW in electric mode — near-silent operation

Signatures — IR: LOW-MEDIUM — diesel generator raises IR when running

Signatures — Visual: MEDIUM — tracked vehicle visible on open ground; low profile partially mitigates

Signatures — Radar: LOW — small radar cross-section

PROPULSION & PERFORMANCE

Propulsion Type: Hybrid — diesel generator charges lithium-ion batteries powering electric track motors

Drive Mode — Electric: Near-zero acoustic and IR signature — tactical movement without detection

Drive Mode — Diesel: Higher acoustic and IR signature — used for battery recharging away from contact

Maximum Speed: ~20 km/h

Operational Range: ~40 km — varies by load and terrain

Terrain Capability: Tracked — handles mud, snow, shell-cratered ground, rubble that stops wheeled platforms

Autonomy: Remote operated standard — fully autonomous available with Milrem Intelligent Function Integration Kit

> *PETER NOTE: The hybrid drive is the tactically decisive feature. In Ukraine, drone operators and artillery spotters work by sound as much as by sight. A near-silent platform closing on a casualty collection point or moving ammunition forward is categorically harder to target than a conventional diesel vehicle. The tracked configuration handles terrain that wheeled platforms cannot. Ukraine has validated both of these advantages in the highest-intensity land conflict since World War II.*

MISSION VARIANTS & WEAPONS INTEGRATIONS

Transport: Carries up to 750 kg cargo — ammunition, rations, equipment — to forward positions without driver exposure

CASEVAC: Casualty evacuation — wounded soldier transported to casualty collection point autonomously

Combat: Remote weapon station integration — multiple validated weapons systems (see below)

EOD: Explosive ordnance disposal — robotic arm and sensor package for IED and mine investigation

ISR: Surveillance sensor package — persistent intelligence collection without crew exposure

C-UAS: LOKI RCWS integration — mobile counter-drone weapon system on tracked platform

Mine Clearance (MABS): Flail or tiller system — mechanically detonates mines, removes human engineer from minefield

> **NEW — H-POMBS Minefield Breaching — unveiled Enforce Tac 2026 February, Nuremberg. KNDS/Milrem/Wescom Group collaboration. Rocket-propelled line charge clears 54-metre lane per shot through anti-personnel mines. Two shots per THeMIS load. Already operationally used in Ukraine to clear routes through contested terrain and reach critical infrastructure.**

WEAPONS INTEGRATIONS — COMBAT VARIANT

BURIA 40mm Automatic Grenade Launcher: Ukrainian Frontline company. Integration validated in live-fire trials in Ukraine August 2025. Engagement range: 1,100 metres. In serial production. Keeps operators safely out of harm's way.

> **NEW — BURIA detail: live-fire validation conducted under operationally relevant conditions on Ukrainian frontline. System in serial production as of August 2025. First-in-class training programme deployed to frontline combat support units.**

MSI Terrahawk RCWS: 12.7mm remote weapon station — UK DSEI 2025 integration with Overwatch APEX UAS and Pearson Engineering

Javelin Anti-Tank Missile: Fire-and-forget top-attack — removes crew from anti-armor engagement

Saab MSHORAD: Short-range air defence — drone and helicopter intercept capability

81mm Mortar System: Indirect fire — removes mortar crew from exposed firing position

Hunter 2-S Loitering Drones: UAS launch from THeMIS — swarming loitering munitions deployed from tracked carrier

LOKI RCWS: Counter-UAS remote weapon station — mobile drone killer configuration

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COUNTERMEASURE VULNERABILITY PROFILE

RF Jamming: MODERATE — encrypted control link; semi-autonomous mode continues pre-programmed route if link severed; tether option available for high-jamming environments

GPS Spoofing / Denial: MODERATE — GPS plus inertial navigation; high-jamming environments constrain autonomous mode accuracy

EMI / EMC Attack: MODERATE — European military-grade electronics with partial hardening; not MIL-STD-461 rated in base configuration

Kinetic Attack: HIGH — no armour in base configuration; vulnerable to RPG, IED, anti-materiel rifle, FPV drone strike

Acoustic Detection: LOW — near-silent in electric mode; diesel generator raises signature; operational timing manages exposure

Visual Detection: MODERATE — tracked vehicle visible on open ground; low profile is partial mitigation

Mine Strike: MODERATE — MABS variant designed to absorb detonation; standard logistics variant is not mine-protected

Laser / Directed Energy: MODERATE — no specific hardening documented; airframe vulnerable at short range

Overall Rating: MODERATE-HIGH kinetic vulnerability — accepted by doctrine, not a design failure

The correct vulnerability metric for the THeMIS is not survivability against tank rounds — it is the exchange rate between platform losses and crew casualties avoided. Two THeMIS vehicles destroyed in Ukraine represents two soldiers who returned home rather than becoming casualties on a logistics or CASEVAC run. The platform is designed to absorb losses that would otherwise be absorbed by humans.

> **NEW — Confirmed combat losses as of early 2026: two THeMIS vehicles no longer in service — one destroyed by FPV drone strike, one by other means. 70 vehicles operational. Loss rate approximately 2.8% from confirmed combat exposure over three and a half years of deployment.**

OPERATIONAL HISTORY

August 2022: First THeMIS delivered to Ukrainian Armed Forces — first Western military UGV deployed to this conflict — CASEVAC and cargo logistics missions

2022–2025: Continuous combat deployment on Ukrainian frontline — cargo runs and CASEVAC under drone observation and artillery fire

January 2024: $200M UAE contract — 60 UGVs — confirms Gulf state demand alongside NATO procurement

August 2025: BURIA 40mm automatic grenade launcher live-fire validated in Ukraine — 1,100m engagement range — THeMIS transitions to direct fire weapon system — serial production confirmed

September 2025: Milrem announces record second contract with Ukraine — 100+ additional vehicles primarily for logistics — financing by unspecified European government

October 2025: Netherlands Minister of Defence formally announces Dutch-led initiative — 150+ THeMIS for Ukraine — assembly at VDL Defentec Born Netherlands — training included

November 2025: THeMIS-K Korean variant announced — Hanwha Defence partnership — extends platform into Indo-Pacific market

February 2026: H-POMBS minefield breaching system unveiled Enforce Tac 2026, Nuremberg — 54m lane per shot — two shots per load — KNDS/Milrem/Wescom — already operationally used in Ukraine

Early 2026: 70 vehicles delivered to Ukraine — target 150 by end 2026 — 90% in cargo/CASEVAC configuration — 2 confirmed combat losses

Operators: Estonia, Netherlands, Germany, France, Norway, UK, USA, UAE, Ukraine, Australia, Spain + 8 additional nations — 19 total

Combat Record: First combat-deployed modular UGV at scale in a peer conflict — most combat-proven military UGV in existence as of publication

> **NEW — Shephard Media March 2026: Milrem expects 150 THeMIS delivered to Ukraine by end 2026 — more than doubling the current fleet of 70. Two vehicles confirmed no longer in service.**

PLATFORM VARIANTS

THeMIS Transport: Base logistics variant — cargo and CASEVAC — primary Ukraine configuration (90% of delivered units)

THeMIS Combat: Weapons station integration — multiple RWS options

THeMIS ISR: Sensor payload — persistent surveillance

THeMIS EOD: Explosive ordnance disposal — robotic arm and inspection tools

THeMIS CASEVAC: Dedicated casualty evacuation configuration

THeMIS Observe: Long-range observation and targeting support

THeMIS MABS: Mine Area Breaching System — flail, tiller, or H-POMBS rocket line charge

THeMIS-K: Korean variant — Hanwha partnership announced November 2025

HAVOC 8x8 RCV: Next-generation larger robotic combat vehicle — unveiled IDEX 2025 — heavier armoured class

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ENGINEER'S NOTES — CONVERGENCE & ANALYSIS

> *ENGINEER'S NOTE: The THeMIS is the land domain equivalent of what the Shahed-136 is in the air domain — a modular, producible, expendable platform that removes humans from the most dangerous mission phases. The Shahed costs $20,000-$50,000 and absorbs the intercept that would otherwise target a crewed aircraft. The THeMIS costs $200,000-$500,000 and absorbs the FPV drone strike that would otherwise target a logistics soldier or CASEVAC medic. The economic logic is identical. The domain is different.*

> *ENGINEER'S NOTE: The H-POMBS integration is analytically significant beyond the immediate capability. A combat engineer leading a minefield breach through a drone-saturated environment is among the most dangerous missions in modern land warfare. Every meter of contested terrain in Ukraine is observed by FPV drones. A human engineer with a mine probe is a stationary target. A THeMIS with a rocket line-charge clears the lane from standoff*

> *distance, detonates, and the breach is open. The same logic that drove the development of remotely-piloted aircraft for air defense suppression now applies to combat engineering. Remove the human from the most lethal phase of the operation.*

The flail approach is not subtle — you beat the ground hard enough to detonate or destroy everything in the lane. The question is always survivability of the mechanism under anti-tank mine detonations. THeMIS was designed with this in mind. The platform absorbs the blast that would otherwise kill a crew.

SOURCES & CROSS-REFERENCES

Manufacturer: https://milremrobotics.com

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https://milremrobotics.com/milrem-robotics-to-deliver-over-150-themis-ugvs-to-ukraine-in-a-dutch-led-defence-initiative/

BURIA Integration (Aug 2025):
https://www.asdnews.com/news/defense/2025/08/12/milrem-robotics-frontline-integrate-themis-ugv-buria-rws-into-unified-combat-support-system

H-POMBS Enforce Tac 2026:
https://www.armyrecognition.com/news/army-news/2026/estonias-milrem-unveils-themis-ugv-with-h-pombs-minefield-breaching-system-at-enforce-tac-2026

Ukraine Numbers (Shephard 2026):
https://www.shephardmedia.com/news/landwarfareintl/milrem-outlines-havoc-and-vector-plans-as-ukrainian-themis-numbers-set-to-double/

UK Variant DSEI 2025:
https://breakingdefense.com/2025/09/european-

firms-team-up-to-make-uk-specific-themis-combat-unmanned-ground-vehicle/

Army Technology Factory Visit: https://www.army-technology.com/news/milrem-to-roll-out-more-than-100-themis-ugvs-for-ukraine/

Cross-Reference: See Volume 2 Land Domain: Textron Ripsaw M5 (heavier armoured RCV class); Ghost Robotics Vision 60 (quadruped ISR); Boston Dynamics Spot (commercial-to-military); Anduril Bolt (C-UAS interceptor)

Cross-Reference: See Volume 2 Air Domain: Shahed-136 (comparable expendable doctrine applied to air domain)

Volume 1 Cross-Reference: Chapter 5 (Land Domain ISR and Strike); Chapter 25 (Lessons Learned — expendable platform doctrine)

Note: HAVOC 8x8 RCV is a separate platform requiring its own data card — see Volume 2 Land Domain pending cards